

Part 3 - Responsiveness Summary

In accordance with CERCLA Section 117, 42 U.S.C. Section 9617, EPA released the Proposed Plan on September 23, 2015, and the public comment period ran through December 1, 2015, to allow interested parties to comment on the Proposed Plan. EPA held a public meeting regarding the Proposed Plan on November 19, 2015, at the Kalamazoo Nature Center, Kalamazoo, Michigan. Approximately 40 people attended the meeting. Representatives from EPA, MDEQ, and MDNR were present at the public meeting. A written transcript from the public meeting is available in the AR.

The AR index is attached as Appendix 2 to this ROD. EPA, in consultation with MDEQ, carefully considered all information found in the AR prior to selecting the remedy documented in this ROD. Complete copies of the Proposed Plan, AR, and other pertinent documents are available at:

The Kalamazoo Public Library
315 South Rose
Kalamazoo, MI 49007

EPA Region 5 Superfund Division Records Center
77 West Jackson Boulevard
Chicago, IL 60604

When developing responsiveness summaries, EPA is not required to reprint public comments verbatim and may paraphrase where appropriate. In this responsiveness summary, EPA has included large segments of the original comments. However, persons wishing to see the full text of each public comment should refer to the AR, which includes all public comments submitted to EPA.

3.1 Comments

Comment: One commenter suggested that certain scientific studies have concluded that there is no causal connection between PCBs and human health.

Response: EPA disagrees with the comment and considers PCBs to pose a significant risk to human and ecological receptors. PCBs are classified as probable human carcinogens and it is EPA's position that PCB contamination at OU1 presents an unacceptable risk to human health and ecological receptors.

Comment: One commenter noted the Lyondell bankruptcy agreement dedicated separate funds to the OU1 cleanup than it did to the cleanup on the Kalamazoo River.

Response: Through the Lyondell bankruptcy, the Lyondell Environmental Custodial Trust was created and was provided with certain funds available primarily for the cleanup of OU1. Separately through the bankruptcy, EPA received funds which can be used anywhere on the Site.

Comment: Multiple commenters suggested that the Biopath bioremediation process should be used to treat OU1 PCBs on-site. Commenters claim that application of BioPath's technologies will result in total cleanup, eliminating the PCBs at OU1. Further, they request that EPA use

language in the ROD that allows for the possibility of using BioPath's technology as a part of the remedy.

One person commented that Biopath's technology was untested at this time and, while it might prove effective in the future, for now expressed support for Alternative 2D.

The Kalamazoo River Watershed Council (KRWC) commented that in-situ bioremediation would be exciting, but that BioPath has not provided the necessary information for KRWC to endorse the application of BioPaths's technology at OU1. KRWC suggested that BioPath's technology be subject to a pilot study on a laboratory benchtop or small field scale, if it is judged by EPA scientists to show promise. KWRC concluded that they would advise against committing to BioPath at the present time given the lack of evidence that it would achieve remediation goals.

Response: EPA has a stated preference for treatment of contaminated materials when practical. EPA also must select remedies that are cost-effective. EPA evaluated a wide range of treatment technologies in the FS and in a separate evaluation by EPA's subject matter experts. Both reviews concluded that, based on the nature of the waste at Allied Landfill, there are no known treatment technologies that would successfully and practicably treat the waste at OU1 in a cost-effective manner. Both reviews included an evaluation of bioremediation. At this point in time, Biopath has provided no technical information to suggest that its technology could successfully treat the contaminated materials at OU1. Due to the absence of any current information suggesting that effective and cost-effective on-site treatment technologies are potentially available, it is inappropriate to reference any potential use of such technologies, including BioPath's technology, in the ROD. Regardless, EPA is willing to facilitate BioPath Solutions' participation in a bench-scale study.

Comment: Multiple commenters, including the KRCC, expressed concerns that implementation of Alternative 2D would leave behind a 40-foot mound of contaminated soil in the heart of the city. KRCC requested that the design of the remedy minimize the size of the hill and maximize acreage available for redevelopment.

Response: EPA will seek to maximize the pull-back of the OU1 waste from Portage Creek during the design and implementation of the remedy, as the increased size of the pull-back will increase the long-term effectiveness and protectiveness of the remedy. Efforts to decrease the height of the landfill might decrease the long-term protectiveness of the remedy by requiring a smaller pull-back. However, during the RD, EPA will look for opportunities to reduce the height of the landfill consistent with the needs of the remedy.

Comment: Multiple commenters, including the KRCC, requested that the PCB materials which had been placed at OU1 as part of the Former Bryant Mill Pond removal action be disposed of off-site rather than be interred at OU1 as part of Alternative 2D.

Response: Segregation and then off-site disposal of the materials removed from the Former Bryant Mill Pond in 1998-1999 would dramatically increase the cost of the

remedy and increase the short-term risks associated with implementing the remedy, but would not increase the long-term effectiveness of the remedy. For these reasons, the scenario suggested by these commenters is not a viable remedial alternative.

Comment: Two commenters commended EPA and those in the City of Kalamazoo for working together to improve the formerly combative relationship, supported Alternative 2D, and commented favorably on the community outreach. Additionally, one commenter indicated that a local citizens group approves in general terms with Alternative 2D. Another commenter urged that this collaboration continue moving forward.

Response: EPA recognizes these comments. EPA intends to work with MDEQ and the City throughout the design, implementation and long-term maintenance of the remedy and to continue outreach to the larger community.

Comment: One commenter questioned the cost-benefit analysis of Alternative 2D and asserted that Alternative 2D has uncertain effectiveness. CERCLA §121(b)(1)(f) should be considered with a worst-case scenario in order to provide a better cost-benefit analysis.

Response: EPA notes that CERCLA does not require a “cost-benefit analysis,” but rather requires that EPA select “cost-effective” remedies. In making cost-effectiveness determinations, the following definition is used: “A remedy shall be cost-effective if its costs are proportional to its overall effectiveness.” (NCP Section 300.430(f)(1)(ii)(D)). Cost-effectiveness deals with the reasonableness of the relationship between the effectiveness afforded by each alternative and its costs compared to other available options. Regarding the effectiveness of Alternative 2D, waste containment using engineered barriers is a proven and reliable technology. Waste containment using engineered barriers has been used to successfully remediate three other landfills at the Allied Paper/Portage Creek/Kalamazoo River Superfund Site, as well as numerous landfills at other Superfund sites across the country. The CERCLA reference made by the commenter is to the general rule that EPA take into account, during the remedy selection process, the costs to repair a failed remedy. Based upon its experiences with similar landfills, EPA believes that failure of Alternative 2D is unlikely. Further, EPA believes that even if failure of Alternative 2D were to occur and additional costs incurred, Alternative 2D would still be cost-effective.

Comment: One commenter, noting that the PCB contamination on residential properties is believed to be located under four feet of clean fill material, inquired as to whether it would be cost-effective or environmentally preferable to relocate those residents.

Response: EPA relocates residents only in extreme situations in which the risks posed by a Superfund site are such that it is unsafe for residents to remain in their homes. Such conditions do not exist for the residents whose properties are impacted by OU1 wastes. Further, any potential impacts of excavation work, such as accidental release of contaminated materials to Portage Creek or generation of contaminated dust, can be readily mitigated through implementation of proper controls during construction.

Comment: One commenter suggested that EPA treat Michigan's Environmental Protection Act as an "applicable or relevant and appropriate requirement" ("ARAR") under 42 U.S.C. § 9621(D)(2)(A)(ii) for the OU1 remedy and that EPA should therefore select groundwater subalternatives (i) or (ii) as part of the OU1 remedy in order to protect Portage Creek.

Response: The Michigan Environmental Protection Act (MEPA) is found at Part 17 of Michigan Act 451 of 1994. However, the MEPA does not contain a "promulgated standard, requirement, criteria, or limitation" with the meaning of 42 U.S.C. § 9621(D)(2)(A)(ii). Therefore, the MEPA does not qualify as an ARAR under CERCLA.

As explained in Part 2 of this ROD, EPA believes that groundwater sub-alternatives (i) and (ii) are not necessary to protect Portage Creek. Groundwater data collected in the flow path between the waste at OU1 and Portage Creek demonstrates that groundwater at OU1 does not pose a risk to Portage Creek. Though there are seeps expressing low levels of PCBs to Portage Creek, EPA expects to eliminate this transport pathway by removing PCB-contaminated waste from the seep pathway through the pullback of those wastes.

Comment: One commenter urged EPA to consider the presence of children at OU1, as recreational reuse is intended for portions of OU1, and that increased signage and fencing could help protect children from drinking creek water or from harm from remedy components. The commenter also stated that EPA should consider the risks posed to fish in Portage Creek and the potential for contamination to anglers.

Response: EPA developed Final Remediation Goals for OU1 based upon potential exposure of receptors, including children. Currently, people can be exposed to the contaminated material at OU1 through direct contact with exposed contaminated materials or through eating fish that have ingested contaminated materials that have eroded into Portage Creek. Alternative 2D requires the excavation of those contaminated materials above FRGs and consolidation of such contaminated materials beneath an engineered barrier. Alternative 2D will prevent both direct contact exposure and any erosion and runoff of exposed materials into Portage Creek. Following implementation of Alternative 2D, the contaminated materials at OU1 will no longer present a significant risk of exposure to users, including children.

After implementation, EPA expects to reduce fencing and rely upon proper maintenance of the remedy to prevent exposure. Additional signage at OU1 will be put in place to minimize any potential harm from remedy components. EPA will work with MDEQ and MDNR to increase awareness of the restrictions on fish consumption as well as signage within the Kalamazoo River area, which includes OU1. The Michigan Department of Health and Human Services has recently developed www.michigan.gov/eatsafefish to better explain fish consumption restrictions and associated risks. The cleanup at OU1 will reduce PCB levels in fish and protect fish consumers.

Comment: One commenter requested that EPA clarify how CERCLA remedies are exempt from permit requirements under Section 404 of the Clean Water Act.

Response: Pursuant to Section 121(e)(1) of CERCLA, 42 U.S.C. § 9621(e)(1), no “Federal, State or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite, where such remedial action is selected and carried out in accordance with this section.” Pursuant to this exemption, permits are not required for the on-site wetlands activities addressed under the OU1 remedy. However, in accordance with Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), remedies must comply with substantive promulgated standards, requirements, criteria or limitations under Federal environmental law.

In its comment, the commenter cites to language from an EPA webpage discussing Clean Water Act permitting exemptions. That language derives from Section 404(f)(1) of the Clean Water Act, 33 U.S.C. § 1344(f)(1), which exempts certain activities from Clean Water Act permitting requirements. That language is not relevant to the OU1 remedy. As explained above, on-site CERCLA remedies do not require permits but still must comply with substantive requirements.

Comment: One commenter requested clarification of whether EPA was relying on Nationwide Permit 38 and further commented on its application to Alternatives 3 and 4.

Response: EPA is not relying on Nationwide Permit 38, which by its terms exempts EPA-approved CERCLA activities from Section 404 permitting requirements, with respect to the OU1 remedy. Moreover, EPA has selected Alternative 2D, not Alternatives 3 or 4, as the OU1 remedy.

Comment: One commenter requested that EPA, with respect to wetlands covenants required by the ROD, “clarify the environmental covenant and the imposition it will have on the community.” The commenter further requested that the public be notified of “the details of the covenant and if compliance requires community stewardship.” The commenter also requested that EPA provide details about wetland mitigation if EPA selects Alternatives 3 or 4.

Response: The Selected Remedy identifies various areas of OU1 that may require environmental covenants to protect wetlands. The exact locations to be covered by the covenants, and the substantive requirements of the covenants, will be identified during the remedial design/remedial action process. Each owner of land requiring a covenant will be expected to file the covenants in the local property records. Those owners, as well as subsequent owners, will be expected to comply with the covenants.

Once filed, the covenants will be publicly available in the local property records. The covenants will require stewardship, either by responsible parties or by governmental agencies. EPA, as part of the periodic remedy review required by Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), reviews institutional controls to determine their continued effectiveness. In addition, parties performing the work at OU1 will have obligations to review the institutional controls under an Institutional Controls Implementation and Assurance Plan.

EPA has selected Alternative 2D, not Alternatives 3 or 4. Regardless of which Alternative was selected, the details of any wetlands mitigation activities cannot be identified until the remedial design/remedial action process.

Comment: One commenter stated that EPA should reexamine the proposed selection of Alternative 2D in order to stay consistent with internal guidelines, state regulations, and federal regulations. The commenter explains that EPA did not follow guidelines because it did not choose the remedy that best provides for the community. The commenter claims that Alternative 3 is the most cost-effective option if evaluated in terms of long-term effectiveness, reduction of toxicity and community acceptance. The commenter adds that EPA should consider the worst-case scenario when evaluating the remedy and the costs posed by failure of the Selected Remedy.

Response: EPA disagrees with commenter's assertions that EPA did not follow all appropriate internal guidelines and federal regulations in the development, proposal and selection of Alternative 2D, and disagrees with the commenter's understanding of the nine evaluation criteria set forth in the NCP. EPA is not required to select the most cost-effective remedy, but instead must select a remedy that is cost-effective and represents the best balance of the nine criteria. As discussed in the response to an earlier comment, cost-effectiveness deals with the reasonableness of the relationship between the effectiveness afforded by each alternative and its costs compared to other available options. Alternative 3 is not cost-effective because its estimated costs are more than three times the cost of remedies like Alternative 2D without a significantly greater reduction in risk. Alternative 3 achieves only a slightly greater level of protectiveness than remedies like Alternative 2D, but presents significantly greater short-term risks. Additionally, were portions of the landfill to fail after implementation of Alternative 2D, the sum of the additional cost to fix the landfill and the initial cost of the remedy would still be significantly less than the cost of Alternative 3.

Comment: One commenter asserted that Alternative 3 is the only alternative that presents a permanent solution for OU1 and that the long-term protectiveness and costs of consolidation and capping alternatives are uncertain. The commenter added that EPA should better explain the uncertainties with containment remedies like Alternative 2D and the uncertain costs beyond 30 years, the period for which costs are considered.

Response: EPA disagrees with commenter's assertion that Alternative 3 is the only alternative that presents a permanent solution. Consolidation and capping remedies have been used successfully at numerous sites throughout the country, including three other landfills at the Site that contain PCBs. Containment remedies employ proven technologies that are protective over the long term provided that they are maintained. EPA will ensure that long-term maintenance occurs at OU1. EPA acknowledges that there will be long-term maintenance costs at OU1 that extend beyond 30 years. EPA typically considers a 30-year period when calculating the "total present worth" cost of Superfund remedial alternatives because, based on the calculations that deal with the time value of money, costs beyond 30 years do not significantly change the dollar value of the total present worth cost.

Comment: One commenter stated that EPA should prefer Alternative 3 because CERCLA gives preference to alternatives that permanently and significantly reduce the volume, toxicity or mobility of hazardous substances.

Response: The commenter appears to be referring to CERCLA's preference for remedies employing treatment that permanently and significantly reduces the toxicity, mobility, or volume of the hazardous substances, pollutants, or contaminants as a principal element. Excavation and off-site disposal of the waste, the primary components of Alternative 3, does not constitute treatment and does not reduce the toxicity, mobility, or volume of the waste. Alternative 3 simply moves the waste to another location.

Comment: In considering the implementability of Alternative 2D, a commenter suggested that EPA's five-year review process may not provide enough frequency of observation to adequately monitor the protectiveness of the remedy and that EPA consider adaptive management. The commenter adds that EPA should specify how the long-term monitoring plan will be implemented.

Response: Through the five-year review process, EPA will conduct comprehensive reviews of the remedy. In addition to five-year reviews, EPA will require regular inspection and O&M of the landfill cap, the groundwater monitoring system, and the gas collection system, including any necessary repairs of these systems. EPA will also require that compliance with institutional controls, which are required as part of the remedy, be achieved and maintained. Collectively, these actions will help ensure the long-term protectiveness of the remedy. The details of the O&M requirements will be provided in a comprehensive long-term monitoring plan developed for OU1 during the remedial design/remedial action process.

Comment: One commenter said that EPA should reconsider the cost-benefit analysis for Alternative 2C because several studies indicate that incinerators may be a cost-effective solution for hazardous waste.

Response: Incineration is a form of treatment, involving destruction of PCBs. Immobilization, which prevents the migration of contaminants, is another form of treatment. When EPA selects incineration as a remedy, it is typically for sites with small volumes of acutely hazardous and highly mobile waste. OU1 is not the type of site for which incineration is considered a viable remedy because OU1 contains a large volume of waste (1.6 million cubic yards) that is relatively immobile and mostly found in low concentrations. Additionally, incineration is an expensive remedy. Alternative 2C considers incineration of approximately 10 percent of the OU1 waste, with the cost of incineration being \$21M in addition to all other costs. Since the waste materials at OU1 are already immobile – one of the potential end goals of treatment – incinerating some of the waste will not increase protectiveness. For these reasons, incineration is not a cost-effective cleanup option at OU1.

Comment: One commenter suggested that because the FS and Proposed Plan state that Alternative 3 is viable (because it is implementable and proven) and because it is supported by the community, EPA should either select that alternative or better explain its lack of viability.

Response: Alternative 3 may be implementable, but it is not cost-effective, as discussed in the response to earlier comments. EPA is required to select a cost-effective remedy, and therefore cannot select Alternative 3.

Comment: Two people criticized EPA's efforts to reach out to the general public and minorities in the community. One commenter said that EPA should have employed flyers and worked with stakeholder groups.

Response: Through recent years, EPA has held community meetings at locations close to the Site so as to be accessible to members of the surrounding community. EPA has also sought to attend the meetings of different stakeholder groups as a way of reaching all members of the community. During the proposed plan public comment period, EPA, with the assistance of the KRCC, coordinated with the Hispanic Heritage Council and held a discussion session at its facility. EPA also coordinated with the KRCC to disseminate flyers to local residents near OU1 immediately prior to the start of the public comment period.

Comment: One commenter expressed the belief that Alternative 2D is the proposed remedy because EPA and MDEQ prioritize money over public health. The commenter also stated his belief that, in regards to BioPath Solutions, EPA is "going to give them the runaround."

Response: EPA considers cost in the remedy selection process by determining if a remedy is cost effective, which it must be in order for EPA to select it. Alternative 3 is not cost-effective because its estimated costs are more than three times the cost of remedies like Alternative 2D without a significantly greater reduction in risk, and with significantly greater short-term risks.

Comment: One commenter raised concerns about 110,000 truckloads going through the community under Alternative 3.

Response: EPA is not selecting Alternative 3. EPA estimates that implementation of Alternative 3, total removal, would require the shipment of approximately 110,000 truckloads of waste from OU1 through the neighborhood to the highway. This amount of truck traffic through residential areas presents a high short-term risk and factored into EPA's remedy selection process.

Comment: One commenter expressed concern about the length of time that it has taken to clean up OU1.

Response: EPA has followed the Superfund remedial process at OU1 and the Site overall, and acknowledges that this process can be lengthy.

Comment: One commenter noted that Alternative 2B was protective of the environment and, emphasizing the downstream risk to fish and wildlife, urged EPA to select Alternative 2B. The commenter stated that the money saved by selecting Alternative 2B could be used in other downstream areas of the Site.

Response: EPA is selecting Alternative 2D for OU1 because it represents the best balance of Superfund's nine selection criteria and is more protective than Alternative 2B. The remedy selection process for OU1 is separate from and unrelated to the bankruptcy funds available for OU1 or to the Kalamazoo River Superfund Site as a whole.

Comment: One commenter expressed concern that funds earmarked for OU1 not be used elsewhere on the Site.

Response: Bankruptcy funds in the Lyondell Environmental Trust can be used elsewhere on the Site if not needed at OU1.

Comment: One commenter inquired as to how the recent decrease in gasoline prices impacted EPA's cost analysis of the off-site disposal alternative.

Response: Fluctuating gas prices do not change EPA's determination that Alternative 3, excavation and off-site disposal of the waste, is not cost-effective. FS-level cost estimates are not subject to constant revision with the rising and falling values of different commodities. Further, changing gas prices should impact the costs estimates for each alternative. Therefore, EPA's comparison of alternative costs, relative to one another, would not change significantly.

Comment: One commenter expressed concerns about EPA's proposed remedy, asserting that EPA did not sufficiently explore off-site disposal because there is a commercial landfill that can accept PCBs in Michigan.

Response: The commenter's statement is not accurate. EPA considered landfills in Michigan capable of accepting PCB-contaminated waste (both TSCA and non-TSCA) in its cost evaluation of Alternative 3.

Comment: One commenter expressed concerns that if waste were to remain in place, monitoring would go on in perpetuity, that OU1 would have fences in perpetuity, and that 1600 feet of sheet pile wall would be an eyesore in perpetuity.

Response: EPA acknowledges that Alternative 2D will require monitoring of OU1 in perpetuity. After the remedy is implemented there will be a vast reduction in the amount of fencing at OU1. As a part of Alternative 2D, fences will be required at only a small portion of the OU1 property to protect mechanical components of the landfill gas collection system. Fences will not otherwise impede access and reuse at OU1. As discussed in the Proposed Plan, implementation of Alternative 2D will include removing at least most of the above-ground portions of the sheet pile wall. EPA does not expect the

remaining wall to be a dominant visual feature at OU1 following implementation of the remedy.

Comment: Multiple people commented that EPA did not consider that Allied Landfill is located in an environmental justice area. One commenter cites Executive Order 12989 on Environmental Justice which requires federal agencies to identify environmental justice areas, address their adverse human health issues to the extent allowable by law and to provide access to public information and participation.

Response: EPA acknowledges that the area surrounding OU1 is an environmental justice area. Accordingly, EPA reached out to the surrounding community through mailings, door-to-door dissemination of site information, and by holding numerous availability sessions in the surrounding area.

Comment: One commenter said that a lower-elevation landfill would require less maintenance over the long term.

Response: Once the remedy has been constructed, the long-term maintenance required for Alternative 2D is likely to be commensurate with a lower-elevation landfill like that included in Alternative 2B.

Comment: One commenter stated that EPA is proposing a remedy for a site with no ERC (EPA believes the commenter to mean an environmental restrictive covenant, a form of institutional control) in place, so the restrictions will not be adhered to.

Response: Under the Selected Remedy, Alternative 2D, EPA will seek to ensure that institutional controls are put in place and complied with in the future. Institutional controls will help ensure the long-term protectiveness of the remedy.

Comment: Multiple commenters stated that EPA should select Alternative 3 because it would have a greater positive impact on property values and have a greater social benefit when compared to Alternative 2D. One commenter said that the best option for the local community would be Alternative 3, because it reduces or eliminates future requirements at the site, would result in a greater chance of reuse of the property, and would help increase property values in the local area. Another commenter cites studies claiming that hazardous sites like landfills can have a negative impact on surrounding property values.

Response: EPA does not select remedies based upon projected property value, social cost-benefit analyses at or around a site, or potential taxable income stemming from the reuse of a site. EPA is required to select remedies based on the nine evaluation criteria set forth in the NCP. EPA notes that the City intends to seek productive reuse of the OU1 property, and that such productive reuse can be possible after implementation of the Selected Remedy, Alternative 2D.

Comment: One person commented that there has been considerable public debate about whether OU1 threatens the City well field. The commenter stated that significant paper residuals located

beneath PCB contamination act as a buffer, that the cap in the consolidation remedy should be more than enough to contain PCBs, and that data shows groundwater flows towards Portage Creek and not towards the well field.

Response: All available data indicate that groundwater at OU1 does not flow towards the City well field. EPA agrees that installation of a cap will significantly mitigate risks posed by contaminated materials at OU1.

Comment: One commenter stated that the Site was listed on the NPL because of the risk of people eating fish. The commenter concluded that areas downstream should be prioritized and that available funds from the bankruptcy should be directed towards downstream cleanup.

Response: Consumption of contaminated fish is one of the current risks at OU1. Implementation of Alternative 2D will address that risk. EPA notes that remedial investigations and feasibility studies are underway for the river portion of the Site and that EPA issued its first ROD for the river portion of the site in September 2015. At this time EPA cannot comment on the specific use of available OU1 funds for future response actions downstream at the Site.

Comments by the City of Kalamazoo

The City of Kalamazoo submitted written comments on the Proposed Plan. The City's full letter is included in the Administrative Record.

Comment: In its comment letter, the City stated that the letter supersedes all of the past technical and associated comments that the City has provided to EPA on OU1, as those comments have been adequately addressed.

Response: This comment is noted.

Comment: The City expressed gratitude to EPA Region 5 for its willingness to engage in discussions with the City and MDEQ on potential plans for OU1. The City also expressed that even though they would prefer total removal of the waste, they support Alternative 2D because it is a reasonable alternative that meets the City's goals of protectiveness, connectedness, accessibility and productivity for OU1.

Response: These comments are noted.

Comment: The City expressed its strong commitment to ongoing joint stewardship and partnering regarding OU1 and the surrounding areas. The City stated its wish to be involved in the long-term management and oversight of OU1, with its chief concerns being: a) public access and recreation; b) areas set aside for economic development; and c) ongoing groundwater monitoring and assessment.

The City expressed its desire to be involved with the future site design and implementation of Alternative 2D. In regard to the design challenges posed by Alternative 2D, the City anticipates

that City staff will participate in this process and the City believes it can provide key information and insight into the design and implementation of the overall proposed remedy.

Response: EPA believes that the City is uniquely positioned to be the long-term steward of OU1 and understands the City's long-term concerns at OU1. EPA is committed to seeking the City's involvement with and input on the design and implementation of the OU1 remedy.

Comment: The City expressed its intent to acquire the former Panelyte site that is adjacent to OU1 and to incorporate the property into the economic redevelopment of various portions of OU1. The City believes that its acquisition of Panelyte will also assist with the overall remedy implementation at OU1.

Response: EPA recognizes the City's comment.

Comment: The City expressed its appreciation of the additional characterization and groundwater monitoring that EPA conducted in 2014, which reduced the City's concerns and uncertainty regarding contaminant fate. The City also expressed its desire to provide input in the development and implementation of the groundwater monitoring plans for OU1 as a part of the City's ongoing stewardship of the groundwater within the City, particularly those areas around the Central Wellfield. This will include involvement in the formal effectiveness and protectiveness reviews by EPA and MDEQ every five years to ensure that the implemented remedy is still protective of the City's vital groundwater resource.

Response: EPA intends to work with the City during the design and implementation of the groundwater monitoring system. EPA expects to seek City input and involvement in all groundwater data reviews.

Comment: The City recognizes the need to ensure that designed features for OU1 that have been appropriately implemented will require monitoring and oversight. Within the public access and recreation area, the City anticipates it will be involved with future programming, oversight, and monitoring of activities within the remediated areas. The City also expressed the desire to be involved with the coordination of efforts regarding long-term oversight and ownership of the capped areas that will become available for public recreation. The City stated that it is appropriate that such areas have local government involvement and oversight, as well as operation and maintenance activities for the site where adequate funding is available to conduct such responsibilities.

Response: As stated in an earlier response, EPA believes that the City is uniquely suited to be the long-term steward of OU1. EPA will seek to have City stewardship at both capped and uncapped areas of OU1. EPA expects that this stewardship will include monitoring and maintenance activities at all parts of OU1.

Comment: At the remediated and uncapped portions of OU1 that have been appropriately delisted and prepared for redevelopment, the City fully intends to facilitate and actively assist in marketing of these properties as part of the ongoing redevelopment activities at the site. The City will also endeavor to assist with the development of any necessary deed restrictions, ordinances,

or other environmental covenants that may be needed to appropriately create opportunities for public access, recreation, and economic redevelopment of the remediated Allied Landfill site.

Response: After the remedy is implemented, there will be areas in which redevelopment may be possible. EPA expects the City to cooperate in the placement, implementation and monitoring of institutional controls, such as deed restrictions, as a part of its stewardship role at OU1.

Comments by the Kalamazoo River Watershed Council

Comment: The KRWC stated that Alternative 2D is an acceptable compromise between the CERCLA guidelines and the community's desire to redevelop part of the site, but that any funding needed greater than the money in the bankruptcy trust specific to OU1 not come from other parts of the bankruptcy settlement, which should be directed to the rest of the Superfund Site downstream of OU1. The KRWC stated that remediation and restoration of the Kalamazoo River downstream continues to be hampered by inadequate funding, and those funds would best be applied there, where PCBs continue to be a problem in fish and the people and wildlife that consume them.

Response: EPA will seek to ensure full implementation of the remedies at OU1 and the river portion of the Site. However, at this time EPA cannot comment on the specific use of available bankruptcy funds.

Comments by the Kalamazoo River Cleanup Coalition

Comment: The KRCC stated its qualified support of Alternative 2D as the cleanup plan for OU1, as it was developed and added to the FS with the assistance of officials and citizens from the City of Kalamazoo. The KRCC prefers total removal of all the site contaminants, but is willing to support option 2D as long as it is fully protective of human health and the environment.

Response: EPA acknowledges the comment and reiterates that Alternative 2D is protective of human health and the environment.

Comment: The KRCC is in favor of there being fewer rather than more PCBs left on the site after the selected remedy is implemented, and requests that if any "hotspots" of PCB-contaminated soils and paper residuals are found during the implementation of the remedy that those be taken away and removed from the site completely.

Response: EPA evaluated the potential for hotspot identification and removal at OU1 during the FS. EPA concluded that high concentrations of PCBs are not aggregated as "hotspots." Rather, the PCBs at OU1 exhibit a "salt and pepper" distribution with high and low concentrations of PCBs scattered throughout the residual-containing areas. As described in Appendix E of the November 2013 FS, it is not practicable to manage these randomly distributed areas as "hotspots." Further, since the PCBs are already immobile within the waste and it is possible to prevent exposure to PCB-containing waste with

engineered barriers, removing higher concentrations of PCBs would serve to increase the cost of the remedy without increasing protectiveness.

Comment: The KRCC requested that language be added to the ROD to assure the citizens of Kalamazoo that no additional contaminants will ever be placed on the site again.

Response: EPA cannot include in the ROD the specific language requested by the KRCC. However, through the use of institutional controls, EPA will seek to ensure that OU1 is only used in a manner that is protective of human health and the environment.

Comment: The KRCC requested that EPA write the ROD in such a way as to leave open the possibility for total removal of all remaining contaminants on the site.

Response: EPA is selecting Alternative 2D as the remedy for OU1. If EPA later determines that a change to Alternative 2D or a different remedy altogether is necessary to achieve long-term protectiveness, EPA can change the remedy for OU1 through a ROD Amendment or other appropriate decision document, as allowed by CERCLA and the NCP.

Comment: The KRCC is in favor of EPA being more innovative rather than less, including being willing to explore emerging technologies for removal or destruction of PCBs and other contaminants on this site.

Response: EPA thoroughly evaluated the potential application of currently available treatment technologies for addressing the waste at OU1. EPA is committed to the exploration of treatment technologies and seeks to responsibly employ those technologies whenever possible.

Comment: The KRCC encouraged the use of local contractors and employers for the design and implementation of the selected remedy when possible.

Response: To the extent that it can, EPA will encourage the parties designing and implementing the remedy to use local contractors whenever possible.

Comment: The KRCC commented that it looks forward to the continued collaboration between the EPA, the City of Kalamazoo and its citizens as the Allied Paper Landfill remedy is selected and enters the design phase.

Response: EPA acknowledges this comment.

Comments by the Natural Resource Trustee Council

The Natural Resource Trustee Council (Trustees), comprised of the Michigan Department of Environmental Quality, the Michigan Department of Natural Resources, the Michigan Attorney General, the U.S. Fish and Wildlife Service, and the National Oceanic and Atmospheric

Administration, provided written comments on the proposed remedy from a Natural Resource Damage Assessment and Restoration perspective.

Comment: The Trustees support Alternative 2D based upon EPA's evaluation of the nine criteria. Alternative 2D provides a greater buffer area from the landfill to Portage Creek with opportunities to capitalize on excavations in the floodplain to potentially increase flood capacity, wetland habitat and to provide a more natural stream environment. The Trustees recommend the development of a 50-foot-wide natural buffer and 200-foot setback for structures along Portage Creek. The Trustees also suggest restoration considerations like natural streambank construction. Lastly, the Trustees offer to coordinate with EPA on beneficial reuse opportunities including their planned removal of the Alcott Street dam.

Response: EPA notes the Trustees' support of EPA's selection of Alternative 2D. During design and implementation of the remedy, EPA intends to consult with the Trustees on mitigation and restoration issues.

Comments by International Paper

Comment: Citing to prior EPA statements, International Paper (IP) asserted that OU1 is a low-risk site. IP further notes that there is no off site migration of contaminated groundwater.

Response: As reflected in the Proposed Plan, this ROD, and the administrative record, OU1 poses a risk (including both cancer risk and non-cancer hazard) to human and ecological receptors through exposure to PCBs. The exposed PCB-contaminated soils, sediments, and paper residuals at OU1 present a human health risk via the direct contact and ingestion exposure pathways. PCBs bioaccumulate in fish which can then be consumed by anglers. Absent a remedy, humans may be exposed to PCB-contaminated soils and sediments. The contaminated materials also pose an ecological risk via direct contact and ingestion pathways. Exposed soils, sediments, and paper residuals currently act as a source of contaminants to Portage Creek via erosion and may result in increased aquatic risk. Additionally, active groundwater seeps at OU1 discharge low levels of PCBs to Portage Creek. The greatest aquatic risk is to fish, which may consume contaminated sediments, and subsistence anglers that consume contaminated fish. Therefore, although there is currently no off site migration of contaminated groundwater from the Allied Landfill, remedial action is required and appropriate to respond to the above-mentioned risks.

EPA has publicly stated that Allied Landfill poses a low-level risk relative to other Superfund sites and therefore would likely rank lower in the risk-based funding prioritization process than other sites. It is important to note that this statement was made only in the context of discussing funding priorities. Nothing in this statement was meant to suggest that the threats to human health and the environment at Allied Landfill, discussed above, do not require remediation.

Comment: IP asserted that technical questions regarding Alternative 2D call into question its implementability. IP asserts that some of the materials to be consolidated are unstable.

Response: EPA acknowledged in the FS Addendum which describes Alternative 2D that geotechnical testing and stability measures will be required for the implementation of this alternative. Based upon the remediation of the other Site landfills, EPA believes that the materials at OU1 can be stabilized, if necessary, through compaction and the addition of stabilizing agents, as well as through the proper sloping and benching of the landfill. As with any engineered remedy, the need for stabilization measures will be determined during the remedial design/remedial action process.

EPA recognized in the Proposed Plan that Alternative 2D presents greater implementability issues due to decreased landfill footprint, increased excavation activities, increased consolidation volumes, and the need for additional stabilization measures. However, these issues are merely differences in degree, not kind. Both Alternatives 2B and 2D present these issues, but they are just different in scope and detail for Alternative 2D. Therefore, while Alternative 2D may be more complex and require additional engineering compared to some of the other alternatives, Alternative 2D is not conceptually different or less implementable than those other alternatives.

Comment: IP noted that Alternatives 2B and 2D both meet the two CERCLA threshold criteria.

Response: Under the NCP, EPA considers nine criteria when selecting a remedy. Two of those criteria (overall protection of human health and the environment, and compliance with ARARs) are considered threshold criteria that a remedy must satisfy in order to be selected. EPA agrees that Alternatives 2B and 2D both satisfy the threshold criteria, as do each of the other options analyzed in the Proposed Plan and this ROD.

Comment: IP criticized the cost of Alternative 2D compared to Alternative 2B, asserting that the increased cost of Alternative 2D was unwarranted. IP also asserted that EPA failed to account for the costs of predesign investigations and stabilization matters in its cost estimate. IP also asserted that redevelopment was not cost-effective.

Response: EPA is statutorily required to select remedies that are cost-effective. Superfund's July 1999 guidance document entitled "a Guide for Preparing Superfund Proposed Plans, Records of Decision, and other Remedy Selection Documents" specifically states that more than one alternative can be cost-effective and that Superfund does not mandate the selection of the most cost-effective alternative. It further states that the most cost-effective alternative may not present the best balance of tradeoffs in the context of the nine remedy selection criteria. A remedial alternative is cost-effective if its "costs are proportional to its overall effectiveness."

As discussed in Part 2 of this ROD, the long-term effectiveness and permanence of Alternative 2D is enhanced by the increased width of the clean setback between the consolidation area and Portage Creek. The clean setback under Alternative 2D is significantly larger than that provided by the other alternatives that leave waste in place and will reduce the potential for erosion of COC-containing materials into Portage Creek. As pointed out by the natural resource Trustees in their comments, the increased setback available under Alternative 2D allows for greater stormwater management than would be

possible under Alternative 2B, because Alternative 2D could allow for a greater widening of Portage Creek, a configuration that would be better able to handle increased water flow during flood events.

Additionally, the long-term stewardship associated with Alternative 2D will also provide increased protectiveness. Superfund cleanups that involve leaving waste in place require stewardship of the property in perpetuity. EPA's September 2005 task force report entitled "Long-Term Stewardship: Ensuring Environmental Site Cleanups Remain Protective Over Time" addresses issues like those posed at OU1. In evaluating the role of long-term stewardship (LTS), the report states that "site reuse can also help ensure the protection of the remedy itself. For example, sites with active users can help ensure that LTS requirements or activities are occurring, as well as ensure that inappropriate uses of the site are not occurring."

The City of Kalamazoo has made it clear that it is interested in providing stewardship under Alternative 2D. The City has also made it clear to EPA that it is not interested in providing long-term stewardship at OU1 under Alternative 2B, under which the only potential reuse for the former operational areas of OU1 would be for recreational facilities. EPA is statutorily barred from conducting long-term operation and maintenance at Superfund sites and the State's ability to do so is uncertain. OU1 is currently owned by a bankruptcy trust with limited funding and which can remain in existence only as long as that funding lasts. The willingness or ability of other parties to provide stewardship under any alternative is uncertain. The City therefore represents the best potential long-term steward for OU1. For these reasons, EPA believes that the increased costs of Alternative 2D are proportional to the increased protectiveness it offers, that Alternative 2D is cost-effective, and that Alternative 2D presents the best balance of tradeoffs with respect to the remedy selection criteria.

The costs associated with predesign investigations and stabilization matters factored into the cost estimate for Alternative 2D. For example, the cost estimate includes placing the material in 12-inch lifts and compacting the material for stabilization. To address stability issues with the height of the landfill, bench drains were also included in the cost estimate. Bench drains are flat areas along the sides of the landfill that are designed to intercept storm water flow and provide drainage to prevent erosion. As with any of the containment remedies, the exact amount of materials requiring stabilization is not yet known, but EPA has an overall estimate of the amount of materials subject to consolidation, and EPA's cost estimates are based upon this estimate. The need for stabilizing agents cannot currently be assessed for any of the alternatives. Should EPA determine that the cost to implement Alternative 2D is significantly greater than currently estimated, EPA will consider issuing an Explanation of Significant Differences or a ROD Amendment as necessary to address such a cost increase.

IP asserted that the additional costs of Alternative 2D compared to Alternative 2B were not cost-effective, on a per-acre basis, from a redevelopment perspective. However, as explained above, EPA is selecting Alternative 2D because it represents the best balance of tradeoffs with respect to the remedy selection criteria. EPA's analysis of Alternative

2D did not depend on any actual redevelopment but instead on the increased long-term protectiveness that will result from the increased pullback from Portage Creek and from the potential for City stewardship over the OU1 property because of the potential for redevelopment.

Comment: IP asserted that Alternative 2B better meets the five CERCLA balancing criteria better than does Alternative 2D. IP suggests that Alternative 2B can be as effective and protective in the long term as Alternative 2D. IP suggests that Alternative 2B has a greater short-term effectiveness than Alternative 2D because it will require a shorter period of time to implement and require fewer truck trips. IP also suggests that Alternative 2D is more difficult to implement because of the decreased landfill footprint, increased excavation activities, increased consolidation volumes, and the need for additional stabilization measures. Finally, IP notes that Alternative 2B is less costly than Alternative 2D.

Response: As indicated above, a remedy must meet the threshold selection criteria of protectiveness and compliance with ARARs. In selecting between remedial alternatives which meet those threshold criteria, EPA considers five “balancing criteria”: long-term effectiveness and permanence; reduction of toxicity, mobility or volume through treatment; short-term effectiveness; implementability; and cost. After considering each of those criteria, as well as the two modifying criteria (state acceptance and community acceptance), EPA selects an alternative which it believes achieves the best balance among the alternatives. As indicated in the Proposed Plan and this ROD, EPA has carefully considered each of the balancing criteria in selecting the OU1 remedy. When all of the balancing criteria are considered together, EPA believes that the additional long-term effectiveness and permanence provided by Alternative 2D outweighs the minor advantages that Alternative 2B may have with respect to some of the other balancing criteria.

EPA disagrees that Alternative 2B is as protective in the long term as Alternative 2D. For reasons stated elsewhere in this ROD, EPA believes that Alternative 2D is more effective and protective in the long term. The increased pullback creates a more protective buffer between the landfill and Portage Creek and creates the opportunity for long-term stewardship. Alternative 2B lacks those features.

Alternative 2D may pose greater short-term risks than Alternative 2B, but EPA believes that it can mitigate those risks, like accidents and accidental release of contamination to Portage Creek, through the development and use of a site management plan during construction. Although Alternative 2D will include more truck traffic than Alternative 2B, such traffic will be largely on site and will not significantly increase the short-term risks. To the extent that Alternative 2D does pose greater short-term risks, EPA acknowledges this in the discussion of the balancing criteria in Section 2.10 of this ROD. In that discussion of the balancing criteria, EPA also states that the increased short-term risks are more than countered by the significantly greater long-term effectiveness and permanence of Alternative 2D.

EPA recognized in the Proposed Plan that Alternative 2D presents greater implementability issues than Alternative 2B due to decreased landfill footprint, increased excavation activities, increased consolidation volumes, and the need for additional stabilization measures. However, these issues are merely differences in degree, not kind. EPA would employ the same kinds of proven techniques and technologies to implement Alternatives 2B and 2D. While Alternative 2D may be more complex and require additional engineering compared to some of the other alternatives, Alternative 2D is not conceptually different or less implementable than those other alternatives.

As discussed in response to comments above, EPA appropriately considered the costs of the various alternatives. In its consideration of the five balancing criteria, EPA similarly considered the increased cost of Alternative 2D and, in its judgment and expertise, determined that the additional protectiveness provided by Alternative 2D outweighed the increased costs.

Comment: IP asserted that EPA selected Alternative 2D based on redevelopment concerns and that such concerns are not an appropriate remedy selection consideration. IP suggested that Alternative 2B is appropriate for redevelopment. IP also suggested that redevelopment should focus on greenspace development and that Alternative 2B was better for that purpose.

Response: As discussed in response to other comments, EPA did not select Alternative 2D based on redevelopment. Rather, EPA selected Alternative 2D because of the increased long-term protectiveness and permanence provided by that alternative. Other than to the extent it provides a basis for stewardship and City support of the selected remedy, redevelopment by itself played no role in EPA's selection of the remedy. As long as stewardship is obtained, EPA takes no position on what types of redevelopment should occur at OU1.

IP suggested that Alternative 2B is appropriate for redevelopment. The City, however, strongly objected to Alternative 2B and has only expressed a stewardship interest with respect to Alternative 2D. Without stewardship, Alternative 2B is less protective than Alternative 2D.

IP suggested that redevelopment should focus on greenspace development and that Alternative 2B was better for that purpose. In its comments on the Proposed Plan, the City recognized the potential role for both commercial and recreational development at OU1. However, is not appropriate for EPA, through a ROD, to compel or prefer a particular type of development or to compel future land use except to the extent necessary to implement the ROD.

IP suggested that the City's Portage Creek Corridor Reuse Plan justified the focus on green space development at the OU1 properties. The Portage Creek Reuse Plan 2008 does show plans for open space reuse of OU1. However, as evidenced by the City's comments on the Proposed Plan, the City is interested in economic as well as greenspace redevelopment at OU1.

IP noted that redevelopment was not required for the remedies at other landfills in the Allied Paper/Portage Creek/Kalamazoo River site. As described above, redevelopment is not required under Alternative 2D. The potential for City stewardship, which the opportunity for redevelopment provides, is greater for the Allied Landfill than the other landfills because of the absence of viable owners such as are present at the other landfills.

IP suggested that recreational facilities, such as trails, provides the same level of stewardship as Alternative 2D. Absent a party willing to provide the stewardship for those activities or the remainder of the properties, that assertion is simply incorrect.

IP suggested that EPA's guidelines on green and sustainable practices justifies the focus on greenspace development. EPA disagrees with IP's application of EPA's green remediation directive. EPA's goals of green remediation compel EPA to seek ways to lessen the environmental footprint of the remedial action, and is not a part of the nine remedy selection criteria as discussed in the NCP.